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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,352	06/23/2003	Charles Dumoulin	130102/YODGERD:0043	7453

7590 08/31/2004
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EXAMINER

SHRIVASTAV, BRIJ B

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/601,352

Applicant(s)

DUMOULIN ET AL.

Examiner

Brij B Shrivastav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-39 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 15, 16, 18-21, 40-47 and 50-53 is/are rejected.
- 7) ☒ Claim(s) 5, 11-14, 17, 48 and 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date June 23, 2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-10, 15, 16, 18-21, 40-47, 50-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu (US 5,548,218).

As regards to claim 1, Lu teaches a magnetic resonance imaging system and a method of using a phased array coil assembly, including a phased array coil assembly having a plurality of coils coextensively covering a predetermined area, and each of the plurality of coils having a different number of loops over the predetermined area and are dividing the predetermined area linearly into at least three contiguous regions (figures 1-4 and 7, numerals 11, 20, 28; column 1, lines 3-63, column 3, 4 and 5, lines 26-67, 39-67 and 30-40, column 6 and 7, lines 34-67 and 1-10). Further, a signal processing circuit coupled to the phase array coil assembly for receiving a plurality of magnetic resonance signals received by the coils, and signals processing circuit being configured to localize the magnetic resonance signals originating in at least one of the contiguous regions (figures 1, 6, 7; numerals 15, 28, 90, 92, 100 and 1-2; column 5, lines 17-40).

As regards to claim 15, Lu teaches a phased array coil assembly for magnetic resonance imaging, including a plurality of coils coextensively covering a predetermined area, wherein each of the coils having a different number of loops over the

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predetermined area into at least three contiguous linearly arranged regions of the area (figures 1-4 and 7, numerals 11, 20, 28; column 1, lines 3-63, column 3, 4 and 5, lines 26-67, 39-67 and 30-40, column 6 and 7, lines 34-67 and 1-10).

As regards to claim 40, Lu teaches a method of detecting magnetic resonance signals, including steps of receiving a plurality of magnetic resonance signals using a plurality of coils of a phased array coil assembly, wherein the plurality of coils with different number of loops coextensively cover a predetermined area and divide the area into at least three linearly arranged contiguous regions (figures 1-4 and 7, numerals 11, 20, 28; column 1, lines 3-63, column 3, 4 and 5, lines 26-67, 39-67 and 30-40, column 6 and 7, lines 34-67 and 1-10).

As regards to claim 43, Lu teaches a method of using a phase array coil assembly in presence of a gradient field system gradient field system, including steps of receiving a plurality of magnetic resonance signals using a plurality of coils of the phased array coil assembly, wherein the plurality of coils coextensively cover a predetermined area, each of the plurality of coils comprising a different number of loops over the predetermined area and dividing the predetermined area into at least three contiguous regions arranged linearly along the predetermined area ((figures 1-4 and 7, numerals 11, 20, 28; column 1, lines 3-63, column 3, 4 and 5, lines 26-67, 39-67 and 30-40, column 6 and 7, lines 34-67 and 1-10). Further, Lu teaches processing the magnetic resonance signals detected by the phased array coil assembly (figures 1, 6, 7; numerals 15, 28, 90, 92, 100 and 1-2; column 5, lines 17-40; column 3, lines 30-37).

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As regards to claims 2-4 and 16, 41, 42, 44-46, Lu further teaches a plurality of coils configured to overlap their loops and at least four coils coextensively covering the area to determine magnetic resonance signals and combining and correlating received signals from the respective coils (figures 3, 4 and 6).

As regards to claims 6-10, 18-21, Lu further teaches orthogonal disposition of first and second planar phased array coil assemblies enclosing a volume and arranged along an axis and the signals vary in phase (figures 1, 2, 4, and 6).

As regards to claims 47 and 50-53, Lu further teaches data analysis and image creation using magnetic resonance received signals from the individual contiguous region under investigation (figures 6 and 7).

Allowable Subject Matter

2. Claims 5, 11-14, 17, 48 and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Claims 22-39 are allowed.

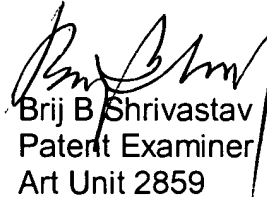
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 26, 2004


Brij B. Shrivastav
Patent Examiner
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